Period: Date: Name:

**Tools for Studying Space – Take Home Unit**

**Directions:** Answer the following questions using the online textbook (pgs. 678-683).

1. Identify the basic task of an optical telescope. Why are most optical telescopes located on mountain tops?

2. What does a refracting telescope do to light?

3. What device is needed to study an image directly, and in detail using the type of telescope Galileo used?

4. Explain the optical defect of refracting telescopes. What effect causes this problem?

5. How did Newton’s telescope avoid the optical defect of refracting telescopes? What is Newton’s type of telescope called?

6. Identify one advantage and disadvantage of reflecting telescopes.

7. Explain the properties that make optical telescopes superior to our human eyes.

8. What kind of telescopes are used to detect radio waves?

9. Radio signals from celestial sources are very weak and radio telescopes have poor resolution. How do we overcome these issues?

10. Identify 4 advantages of radio telescopes.

11. Explain the reasoning for the locations of optical telescopes and radio telescopes.

12. Explain the problem that space telescopes avoid, which ground based telescopes cannot avoid.

13. To date, how many years has the Hubble Space Telescope been in service?

14. Navigate to the “Gallery” page at hubblesite.org and browse some albums. Identify your favorite picture and describe what you are looking at in a paragraph on a separate sheet of paper (you may type on a computer and print out). (Research about the subject in the photo on your own, or by clicking “Learn more in news center” and then click the “release text” tab)